

Higher Education in India: An Analysis of Trends Challenges and Opportunities

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ABSTRACT

The global community has come to the conclusion that a nation's educational system has a direct bearing on its level of economic prosperity. Education is the key to a nation's success. It is unavoidable that an educated population will be found in a developed nation. The higher education system in India is the third largest in the world, after the systems found in the United States and China respectively. Since its independence, India, which is still considered a developing nation, has been making consistent advancements in the sphere of education. Even if there have been a lot of obstacles in the way of India's higher education system, there are also a lot of potential to overcome these obstacles and make India's higher education system much better. It requires more openness and responsibility from those responsible. It is of the utmost significance that fresh scientific study on how individuals learn, in addition to the function that educational institutions like colleges and universities will play in the new millennium. People in India who have a high level of education and relevant experience are what our economy needs to make progress. India is a source of people with a very high level of expertise for other countries. As a result, it will not be difficult at all for India to move our country from the category of developing nation to that of developed nation. This study intends to emphasise the increasing number of universities and colleges in accordance with the requirements of higher education, as well as problems and opportunities in India's system of higher education.

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KEYWORDS: education, opportunities, challenges, colleges, universities

I. INTRODUCTION

India's higher education system is the world's third largest in terms of students, next to China and the United States. In the future, India will be one of the largest education hubs. Since independence, India's higher education sector has witnessed a tremendous increase in the number of universities and university-level institutions and colleges. The "Right to Education Act", which stipulates compulsory and free education to all children within the age groups of 6–14 years, has brought about a revolution in the education system of the country, with statistics revealing a staggering enrolment in schools over the last four years. The involvement of the private sector in higher education has seen drastic changes in the field. Today, over 60% of higher education institutions in India are promoted by the private sector. This has accelerated the establishment of institutes which have originated over the last decade, making India home to the largest number of higher education institutions in the world,

with student enrolments at the second highest (Shaguri, 2013). The number of universities has increased from 677 in 2014 to 1136 in 2020. Despite these numbers, international education rating agencies have not placed many of these institutions within the best in the world ranking. Also, India has failed to produce world-class universities.

Today, knowledge is power. The more knowledge one has, the more empowered one is. However, India continues to face stern challenges. Despite growing investment in education, 25 per cent of its population is still illiterate; only 15 per cent of Indian students reach high school.

and only 7% graduate (Masani, 2008). In comparison to other major developing countries, the quality of education in India, whether at the primary or secondary level, is significantly lower. As of 2008, India's post-secondary institutions offered only

enough seats for 7 percent of India's college-age population. 25 percent of teaching positions nationwide are vacant, and 57 percent of college professors lack either a master's or PhD degree (Newsweek, 2011). As of 2011, there are 1522 degree-granting engineering colleges in India with an annual student intake of 5,82,000 (Science and Technology Education, 2009) plus 1,244 polytechnics with an annual intake of 265,000. However, these institutions face a shortage of faculty and concerns have been raised over the quality of education (Mitra, 2008).

Despite these challenges, India's higher education system has a lot of opportunities to overcome them and establish its identity at the international level. However, it needs greater transparency and accountability. The role of universities and colleges in the new millennium and emerging scientific research on how people learn are of the utmost importance. India provides highly skilled people to other countries. Therefore, it is very easy for India to transfer our country from a developing nation to a developed nation.

In today's competitive environment, better performance and commitment to achieve a competitive advantage (Gleich et al., 2008; Neely et al., 1995) are essential for universities as places for knowledge workers, knowledge direction, and education. Higher education institutions gradually transformed into institutions that are led by competitive market stimulus, commercial and economic necessities, and then they lost their governmental identity (Clarke, 1997). Hence, in the light of the above discussion, an attempt is made to show the performance and current status of higher education institutions in India with the growth of student enrolment in various courses and the opportunities and challenges in higher education.

II. About all India Survey on Higher Education (AISHE)

An All India survey on higher education (AISHE) was initiated in 2011 during which data for the year 2010–11 was collected. The survey was utterly necessary as none of the sources of data on higher education was giving a complete picture of higher education in the country. Also, there were many important parameters on which data is required for policy making, but either no data was available or incomplete data was available. For the first time, all the major stakeholders in higher education, such as university grants commissions, all Indian Councils for Technical Education, and the Medical Council of India, as well as state governments, participated in the data collection exercise. The entire survey was carried out

electronically, and a dedicated portal <http://aishe.gov.in> was created for the purpose, making the exercise completely paperless. The survey covered all the institutions in the country engaged in imparting higher education.

III. Growth of Higher Education Sector in India

As higher education systems grow and diversify, society is increasingly concerned about the quality of programmes, public assessments, and international rankings of higher education institutions. However, these comparisons tend to overemphasise research by using research performance as a yardstick of institutional value. If these processes fail to address the quality of teaching, it is in part because measuring teaching quality is challenging.

(Hernard, 2008).

India has always been a land of scholars and learners. In ancient times, India was renowned for its universities such as Taxila, Nalanda, and Vikramshila, as well as its scholars. By independence, India had 20 universities and 500 colleges enrolling about 2,30,000 students. Since independence, India has progressed significantly in terms of higher education statistics. This number has increased to 1136 universities and 52627 colleges up to December 2019–20. The central government and state governments are trying to nurture talent by focusing on increasing the number of universities and colleges for the expansion of higher education. There is no doubt that much of the progress achieved by India in education has come from the private sector. In fact, the public sector and the private sector are not in opposition to each other but are working simultaneously in the Indian education sphere. The UGC is the main governing body that enforces the standards, advises the government and helps coordinate between the centre and states. The number of universities has grown to 1136 in 2019–20 from 659 in 2011–12, and the number of colleges has increased from 33023 in 2011–12 to 52627 in 2019–20.

IV. Objectives of the study

- To know the increasing rate of universities and colleges in India to meet the demand for higher education
- To study the challenges of higher education in India.
- To know the opportunities for higher education in India.

V. Methodology:

The proposed study is a desk research effort based on secondary data sourced from journals, the Internet, articles, previous research papers, reference research,

and documentation and information services. And the period of study is from 2013 to 2019.

VI. Review of Literature

Avkiran (2008) applied DEA to analyse the relative efficiency of the premise of three performance models, namely overall performance, fee-paying enrolments, and performance on a delivery of educational service. It had been discovered that although the university sector performed well on technical and scale efficiency, there was still a scope for improvement in performance on the fee-paying enrolments scenario.

Abbot and Doucouliagos (2003) used Dea to estimate technical and scale efficiency and ascertained that, in spite of the combination of input and output, the efficiency level of Australian universities was exceptionally high relative to each other.

In their study about quality management in Turkish higher education institutions, Eryilmaz, M.E., Kara, E., Aydodan, E., Bektap, O., and Erdu, D.A. (2016), revealed the importance of quality certifications in the

education industry. As per the study, providing standardization, prestige, publicity, and recognition of the faculty, increased service quality for all stakeholders, and improvement in processes were the major benefits of the certification.

Abramo et al. (2011) measured the technical efficiency and allocative efficiency of Italian universities' research activity by applying the DEA methodology. He considered university research staff as input and the impact of their research products as output.

By using the DEA method, Li(2011) analysed the output efficiency and scale efficiency deficiency of human resources and also mentioned the improvement direction. It was observed that most universities had low technical efficiency based on input-output criteria.

Kuah and Wong (2011) used a variant of DEA, called joint DEA maximization, for performance evaluation. calculated technical, pure technical, and scale efficiencies and identified the reference sets for inefficient departments.

VII. Data Analysis and Interpretation

The following table shows the number of Universities and Colleges year wise.

Table 1: Number of Universities and Colleges in India

Year	No. of Universities	Y-O-Y Growth	No. of colleges	Y-O-Y Growth
2013-14	723	36634
2014-15	760	5.12%	38498	5.09%
2015-16	799	5.13%	39071	1.49%
2016-17	864	8.14%	40026	2.44%
2017-18	903	4.15%	39050	-2.44%
2018-19	993	9.96%	39931	2.26%
2019-20	1136	14.40%	52627	31.79%

(Source: AISHE reports 2019-20)

Table 1 depicts the year-wise number of higher education institutions (universities and colleges) in India. It is observed from the table that there were 723 universities in the year 2013-14, 760 universities in the year 2014-15, and 799,864,903,993, 1136 in the years 2015-16, 2016-17, 2017-18, 2018-19, and 2019-20, respectively. Likewise, the number of colleges is also increasing year over year, but in 2017-18 it is noticed that there is a decrease in the number of colleges due to the deletion of all such colleges that have not registered even after getting the AISHE code.

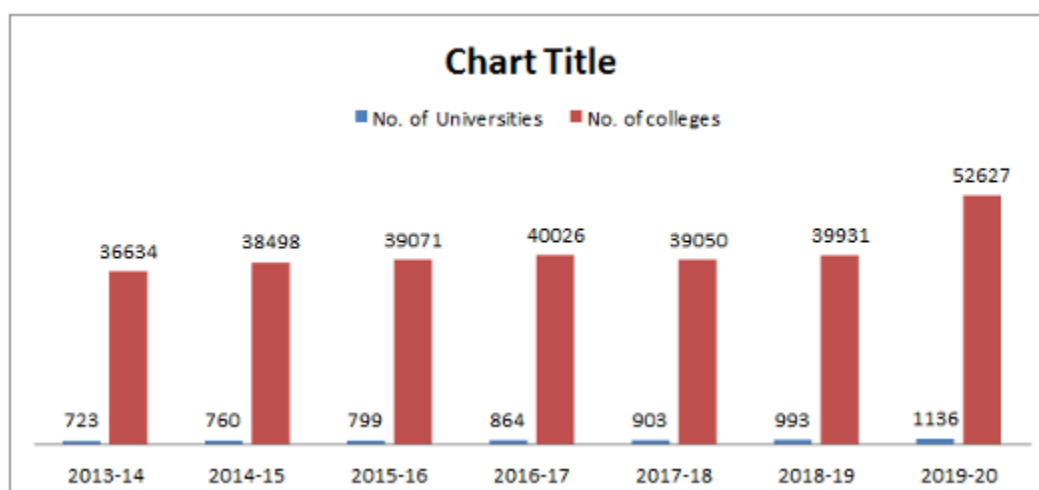


Table 2: level wise enrolment of students

Year	Ph.D		PG		UG	
	Nos	Y-O-Y	Nos	Y-O-Y	Nos	Y-O-Y
2013-14	107890		382219		25500325	
2014-15	117301	8.72%	3853438	0.82%	27172346	6.56%
2015-16	126451	7.80%	3917156	1.65%	27420450	0.91%
2016-17	141037	11.53%	4007570	2.31%	28348197	3.38%
2017-18	161412	14.53%	4114310	2.66%	29016350	2.36%
2018-19	169170	4.80%	4042000	-1.76	29829075	2.80%

Year	PG Diploma		Diploma		Certificate		Integrated	
	Nos	Y-O-Y	Nos	Y-O-Y	Nos	Y-O-Y	Nos	Y-O-Y
2013-14	276502		2285576		187340		125002	
2014-15	215372	-22.11%	2507694	9.72%	170245	-9.13%	141870	13.49%
2015-16	229559	6.59%	2549160	1.65%	144060	15.38%	155422	9.55%
2016-17	213051	-7.19%	2612209	2.47%	166617	15.66%	173957	11.93%
2017-18	235263	10.43%	2707934	3.66%	177223	6.37%	195777	12.54%
2018-19	224000	-4.79%	2699000	-0.33%	162000	-8.58	274143	40.03%

(Source: AISHE reports)

Table 2 Depicts year wise enrolment of students in different courses. It is observed from the table that there is a variation in the number of students enrolling for different courses. Out of total enrolments in different year, it is observed that in the year 2018-19 there were 1,69,170 students who were enrolled for Ph.D. programme, 40,42,000 students enrolled for post-graduation, 2,98,29,075 students enrolled for graduation, 2,42,000 students enrolled for post-graduation in diploma, 26,99,000 students enrolled for Diploma course, 1,62,000 students for certificate course and 2,74,143 students enrolled for integrated course. In total it is observed that there are more number of students who are enrolling for graduation course in comparison with all other courses.

It was our 75th year of independence and still our education system has not been developed fully. We are not able to list a single university in the top 100 universities in the world. Various governments changed during these seven decades. They tried to boost the education system and implement various education policies, but they were not sufficient to set an example for the universe. UGC is continuously working and focusing on quality education in the higher education sector. Still, we are facing a lot of problems and challenges in our education system. Some of the basic challenges in the higher education system in India are discussed below:

➤ **Enrolment:** The Gross Enrolment Ratio (GER) of India in higher education is only 3%, which is quite low as compared to the developed as well as other developing countries. With the increase in enrolments at school level, the supply of higher education institutes is insufficient to meet the growing demand in the country.

➤ **Equity:** There is no equity in GER among different sectors of society. According to previous studies, the GER in higher education in India among males and females varies to a greater extent. There are regional variations too. Some states have high GER while some are quite behind the national GER, which reflects significant imbalances within higher education.

➤ **Quality:** Quality in higher education is multi-dimensional, multi-level, and dynamic. Ensuring quality in higher education is amongst the foremost challenges being faced in India today. However, the government is continuously focusing on quality education. There are still a large number of colleges and universities in India that are unable to meet the minimum requirements laid down by the UGC and our universities are not in a position to take their place among the top universities in the world.

➤ Poor infrastructure is another challenge to the higher education system of India, particularly the institutes run by the public sector, which suffer from poor physical facilities. There are a large number of colleges which are functioning on the second or third floor of the building. On the ground or first floor, there are ready-made hosiery or photocopy shops.

➤ **Political interference:** The majority of educational institutions are owned by political leaders who hold key positions in the government's governing bodies. Students organise campaigns, forget their own objectives and begin to develop their careers in politics.

➤ **Faculty:** Faculty shortages and the inability of the state educational system to attract and retain

well-qualified teachers have been posing challenges to quality education for many years. Large numbers of NET/PhD candidates are unemployed, even though there are a lot of

- When there are vacancies in higher education, these deserving candidates then apply in other departments, which is the biggest blow to the higher education system.
- As per the data provided by the NAAC, as of June 2010, "not even 25% of the total higher education institutions in the country were accredited. And among those accredited, only 30% of the universities and 45% of the colleges were found to be of sufficient quality to be ranked at the "A" level."
- **Research and Innovation:** There are very few scholars in our country whose writing is cited by famous western authors. There is an inadequate focus on research in higher education institutes. There are insufficient resources and facilities, as well as a limited number of quality faculty members to advise students. Most of the research scholars are without fellowships or are not getting their fellowships on time, which directly or indirectly affects their. Moreover, Indian higher education institutions are poorly connected to research centers. So, this is another area of challenge for higher education in India.
- **Structure of higher education:** The management of Indian education faces challenges of over-centralisation, bureaucratic structures, lack of accountability, transparency, and As a result of the increase in the number of affiliated colleges and students, the burden of administrative functions of universities has significantly increased and the core focus on academics and research has been diluted (Kumar, 2015).

VIII. Challenges in Higher Education in India

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IX. Opportunities in Higher Education

India is a large country, with an estimated population of young people aged between 18 and 23 years of around 150 million. The sheer size of the market offers huge opportunities for the development of the higher education sector in India. India now boasts of having more than 52627 colleges and 1136 universities, which has been quite a remarkable growth during the last seven decades. The year 2020 witnessed 31.9 million enrollments, which makes India the 3rd largest educational system in the world. Unfortunately, the educational infrastructure of India is inadequate to handle such huge volumes. In spite of all the government spending in the educational sector, it is just too insufficient to meet the growing requirements. Therefore, the higher education sector has now been identified as one of the most promising areas for private and foreign investments. It offers immense investment opportunities in both non-regulated and regulated segments.(AISHE 2020 Reports).

The Indian higher education system is growing very fast irrespective of various challenges, but there is no reason that these challenges cannot be overcome. With the help of new-age learning tools, it is easy for a country like India to overcome these problems and bring a paradigm shift in the country's higher education sector. The possibilities are endless in such a vibrant country with a huge population properly

educated. If knowledge is imparted using advanced digital teaching and learning tools, and society is made aware of where we are currently lagging behind, our country can easily emerge as one of the most developed nations in the world.

There are opportunities for strategic engagement and capacity building in higher education leadership and management at the state level. There are opportunities for India to collaborate at the national and international level on areas of systemic reform, including quality.

assurance, international credit recognition, and a unified national qualifications framework. Equality of educational opportunity in higher education is considered essential because higher education is a powerful tool for reducing or eliminating income and wealth disparities. The idea of equalising educational opportunities also lies in the fact that "the ability to profit from higher education is spread among all classes of people. There are great reserves of untapped ability in society; if offered the chance, they can rise to the top. A great deal of talent at the highest level is, in fact, lost by an inequalitarian system of education "(Balachander, 1986).

The need to enhance the employability of graduates is presenting entry points for collaboration in enterprise education and entrepreneurship, links with industry, research skills, and a wide range of transferable skills, including English. The emerging interest in Indian higher education institutions in the vocational skills market provides areas for potential engagement with international partners. There is a need to build stronger relationships and increase mutual understanding in higher education by increasing support and participation in platforms (conferences, workshops, seminars) that enable debate and dialogue with other countries of the world. (British Council, 2014).

X. The Findings of the study are as follows:

It is found from the study that there is an increase in the number of universities and colleges to meet the requirements of higher education in India.

- It is found from the study that, though Indian education institutions are increasing, they are still lacking in comparison with developed countries.
- It is observed in the study that Indian higher education institutions lack faculty and suffer from political instability.
- It is found from the study that with proper facilities and opportunities, Indian higher education can try to be one of the developed countries in higher education.

XI. The Suggestions Improving the System of Higher Education are as follows:

- There is a need to implement an innovative and transformational approach from primary to higher education level to make the Indian educational system globally more relevant and--
- Higher educational institutes need to improve quality.
- There should be a good infrastructure of colleges and universities that may attract the
- The government must promote collaboration between Indian higher education institutes and top international institutes and also generate linkages between national research laboratories and research centres of top institutions for better quality and collaboration.
- There is a need to focus on graduate students by providing them with courses in which they can achieve excellence, gain deeper knowledge of subjects, so that they will get jobs after recruitment in companies, which would reduce the unnecessary rush to the higher education.
- Universities and colleges, both public and private, must be politically neutral.
- Favoritism and the money-making process should be out of the education system.
- There should be a multidisciplinary approach in higher education so that students' knowledge may not be restricted only to their own.

XII. Conclusion

Education is a process by which a person's body, mind, and character are formed and strengthened. It is the bringing of head, heart, and mind together, thus enabling a person to develop an all-round personality, identifying the best in him or her. Higher education in India has expanded very rapidly in the last seven decades after independence, yet it is not equally accessible to all. India is today one of the fastest developing countries in the world, with an annual growth rate going above 9%. Still, a large section of the population remains illiterate, and a large number of children do not get even primary education. This has not only excluded a large section of the population from contributing fully to the development of the country, but it has also prevented them from utilizing the benefits of whatever development has taken place for the benefit of the people. No doubt, India is facing various challenges in higher education, but to tackle these challenges and boost higher education is of utmost importance. India is a country with huge human resource potential. How to utilize this potential properly is the issue that needs

to be discussed. Opportunities are available, but how to get the benefits from these opportunities and how to make them accessible to others is a matter of concern. In order to sustain that rate of growth, there is a need to increase the number of institutes and also the quality of higher education in India. To meet and exceed future expectations, there is an urgent need to reconsider financial resources, access and equity, quality standards, relevance, infrastructure, and, finally, responsiveness.

References

- [1] Eryilmaz, M. E., Kara, E., Aydoğan, E., Bektap, O., and Erdur, D. A. (2016). Quality management in Turkish Higher Education Institutions: Preliminary Findings. *Procedia-Social and Behavioural Sciences*, 229, 60–69.
- [2] Avikiran NK (2008), *Econ Educ Rev* 22:89-97, investigates the technical and scale efficiency of Australian universities through data development.
- [3] M. Abbott and C. Doucouliagos (2003) The efficiency of Australian universities through data development: *SocEcon Plan Sci* 35:57-80
- [4] Abramo G, Cicero T, D'Angelo CA (2011). A field-standardized application of DEA to national-scale research assessment of universities *J Informeter*, vol. 5, no. 4, pp. 618-628.
- [5] Tidake, Vishal & Mazumdar, Nilanjan & Kumar, A. & Rao, B. & Fatma, Dr Gulnaz & Raj, I.. (2023). Sentiment Analysis of Movie Review using Hybrid Optimization with Convolutional Neural Network in English Language. 1668-1673. 10.1109/ICAIS56108.2023.10073750.
- [6] Kandavalli, S. R., Wang, Q., Ebrahimi, M., Gode, C., Djavanroodi, F., Attarilar, S., & Liu, S. (2021). A brief review on the evolution of metallic dental implants: history, design, and application. *Frontiers in Materials*, 140.
- [7] M. Lourens, A. Tamizhselvi, B. Goswami, J. Alanya-Beltran, M. Aarif and D. Gangodkar, "Database Management Difficulties in the Internet of Things," 2022 5th International Conference on Contemporary Computing and Informatics (IC3I), Uttar Pradesh, India, 2022, pp. 322-326, doi:10.1109/IC3I56241.2022.10072614.
- [8] Prabha, C., Arunkumar, S. P., Sharon, H., Vijay, R., Niyas, A. M., Stanley, P., & Ratna, K. S. (2020, March). Performance and combustion analysis of diesel engine fueled by

- blends of diesel+ pyrolytic oil from Polyalthia longifolia seeds. In *AIP Conference Proceedings* (Vol. 2225, No. 1, p. 030002). AIP Publishing LLC.
- [9] Abd Algani, Y. M., Caro, O. J. M., Bravo, L. M. R., Kaur, C., Al Ansari, M. S., & Bala, B. K. (2023). Leaf disease identification and classification using optimized deep learning. *Measurement: Sensors*, 25, 100643.
- [10] Ratna, K. S., Daniel, C., Ram, A., Yadav, B. S. K., & Hemalatha, G. (2021). Analytical investigation of MR damper for vibration control: a review. *Journal of Applied Engineering Sciences*, 11(1), 49-52.
- [11] Abd Algani, Y. M., Ritonga, M., Kiran Bala, B., Al Ansari, M. S., Badr, M., & Taloba, A. I. (2022). Machine learning in health condition check-up: An approach using Breiman's random forest algorithm. *Measurement: Sensors*, 23, 100406. <https://doi.org/10.1016/j.measen.2022.100406>
- [12] Mourad, H. M., Kaur, D., & Aarif, M. (2020). Challenges Faced by Big Data and Its Orientation in the Field of Business Marketing. *International Journal of Mechanical and Production Engineering Research and Development (IJMPERD)*, 10(3), 8091-8102.
- [13] Ruban, S. R., Jayaseelan, P., Suresh, M., & RatnaKandavalli, S. (2020, December). Effect of textures on machining of carbon steel under dry cutting condition. In *IOP Conference Series: Materials Science and Engineering* (Vol. 993, No. 1, p. 012143). IOP Publishing.
- [14] Naidu, K. B., Prasad, B. R., Hassen, S. M., Kaur, C., Al Ansari, M. S., Vinod, R., ... & Bala, B. K. (2022). Analysis of Hadoop log file in an environment for dynamic detection of threats using machine learning. *Measurement: Sensors*, 24, 100545.
- [15] Suman, P., Bannaravuri, P. K., Baburao, G., Kandavalli, S. R., Alam, S., ShanthiRaju, M., & Pulisheru, K. S. (2021). Integrity on properties of Cu-based composites with the addition of reinforcement: A review. *Materials Today: Proceedings*, 47, 6609-6613.
- [16] Kandavalli, S. R., Rao, G. B., Bannaravuri, P. K., Rajam, M. M. K., Kandavalli, S. R., & Ruban, S. R. (2021). Surface strengthening of aluminium alloys/composites by laser applications: A comprehensive review. *Materials Today: Proceedings*, 47, 6919-6925.
- [17] LiG (2011) Output efficiency assessment of university human resources using Procedia Eng 15:4707- 4711.
- [18] TYAI P, Yadav SP, Singh SP (2009) Relative performance of academic departments using DEa with sensitivity analysis Evaluating the Program Plan 32:168-177
- [19] MHRD and AISHE
- [20] Shaguri, Obadya Ray, and Higher Education in India: Access, Equity, Quality, EAN World CongressScholar, Global Access to Postsecondary Education, 2013.
- [21] Masani, Zareer, India is still Asia's reluctant tiger, BBC Radio 4, 27 February
- [22] Newsweek, Special Report: The Education Race, August 18–25, Retrieved on August 8, 2009, from the Press Information Bureau.
- [23] Mitra, Sramana, How To Save The World's Back Office of Forbes, 14.2008
- [24] Henard, Fabrice, Report, Learning Our Lesson: Review of Quality Teaching in Higher Education, 2008. Higher Education in India: 12th Five-Year Plan (2012-17) and Beyond FICCI HigherEducation
- [25] Summit Kumar, Anuj, and Ambrish, Higher Education: Growth, Challenges, and Opportunities, International Journal of Arts, Humanities, and Management Studies, Volume 01, No. 2, Feb. 3, No. 4, 2015, pp. 3–4. Electronic Journal for Inclusive Education, 3, No. 4, 2015, pp. 3–4.
- [26] Nexus Novus, Higher Education Opportunities in India, <http://nexusnovus.com/higher-education-opportunities-india>, Jul 26, 2013 accessed on 30/07/2016.
- [27] Balachander, K. "Higher education in India: Quest for Equality and Equity", Mainstream, 1986.
- [28] British Council, Understanding India- The Future of Higher Education and opportunities for International Cooperation, 2014.